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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/535,158 | 03/24/2000 | Katsuhiro Aoki | 0557-49331-2 | 1887 |

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12/19/2002

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EXAMINER

GRAINGER, QUANA MASHELL

ART UNIT PAPER NUMBER

2852

DATE MAILED: 12/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/535,158

Applicant(s)

FUJISHIRO ET AL.

Examiner

Quana Grainger

Art Unit

2852

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 1-11, 15-25 and 29 is/are withdrawn from consideration.
- 5) ☒ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12, 14, 26 and 28 is/are rejected.
- 7) ☒ Claim(s) 13 and 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 12 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakuraba in view of the admitted prior art of record.

Sakuraba teaches a latent image bearing member 11 having a potential thereon; a developing device 10, the developing device including, a conveyor member 15

Art Unit: 2852

configured to convey the one-component developer from a one-component developer supply and to a developing region where part of the developer-bearing member is closely spaced next to a part of the latent image bearing member 11, a thin layer forming device 16 configured to form the one-component developer being conveyed on the conveyor member into a uniform thin layer having a height corresponding to 1 to 1.5 times the diameter of the toner particles of the one-component developer (column 5, line 64 - column 6, line 3).

The development region includes a gap between the conveyor surface portion and the opposed photoconductive surface portion that is equal to or less than about 150 micron (column 5, lines 61-63).

Sakuraba also teaches an image forming apparatus comprising means for bearing a latent image including image areas and means for applying a developing bias voltage 20 to the means for conveying when the developing operation is performed; the thin layer forming device 16 configured to form the one-component developer on the conveyor member 1 into a uniform thin layer having a height corresponding to 1 to 1.5 times a diameter of the toner particles of the one-component developer (column 5, lines 27-30). Sakuraba does not teach a two level developing method.

The admitted prior art of record teaches that a two level developing method is conventional (specification: page 1, lines 12-18). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the teaching of Sakuraba with an image forming device using a developing method such as taught by

Art Unit: 2852

the admitted prior art of record to also avoid agglomerates and obtain agglomerates free developer (column 1, line 65 - column 2, line 5).

2. Claims 14 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori in view of the admitted prior art of record.

Mori teaches a latent image bearing member 7 having a photoconductive surface with a latent image including image areas; and a developing device (Figure 1), the developing device including, a conveyor member 5 configured to convey the one-component developer from a one-component developer supply and to deliver the one-component developer with a predetermined amount of charge to a developing region where a conveyor surface portion of the conveyor member is closely spaced from and opposed to a photoconductive surface portion of the latent image bearing member 7, a thin layer forming device 6 configured to form the one-component developer being conveyed on the conveyor member into a uniform thin layer, wherein an absolute value of the predetermined amount of charge of the one-component developer is equal to or less than about 10 micro-coulomb/g (abstract: lines 12-end).

Mori does not teach a two level developing method. The admitted prior art of record teaches that a two level developing method is conventional (specification: page 1, lines 12-18). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the teaching of Mori with an image forming device using a developing method such as taught by the admitted prior art of record to obtain

images having excellent gradation characteristics while eliminating reverse electrostatic charge (abstract: lines 1-11).

Allowable Subject Matter

3. Claims 13 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

4. Applicant's arguments filed 10-22-02 have been fully considered but they are not persuasive.

Applicant argues that the admitted prior art of record concerning two-level developing refers only to what was known in Japan. The examiner disagrees with the applicant's characterization of the statement on page 1. The examiner understands the statement to discuss the demand for digital type image forming devices, which applicant argues is increasing in Japan. However, as to the use of digital type image forming devices, the applicant is not understood to be discussing whether digital image forming devices are being used in other countries. How would the applicant know where these devices are being used? Further, digital image devices are being used in this country and a patent teaching digital imaging was cited in the previous action. A second patent has been cited below as well. Therefore, digital imaging is used in image forming devices is used in this country and thus this information is also known in this country.

Applicant argues that Ono does not teach a voltage source that applies a development bias voltage. However, Ono teaches an electrophotography process

Art Unit: 2852

using jump or gap development and a voltage is needed to cause the developer to move from the developing roller to the latent image. Nevertheless, on page 37, paragraph 384 of JP408297413A, Ono teaches that the developing bias is 400V and 1200V peak to peak. Lastly, the cited prior art of record also teaches the application of a developing bias voltage. Nevertheless, Ono is no longer used in the rejection.

Claims 1-11, 15-25, 29 are now allowed based upon applicant arguments. Applicant's arguments with respect to claims 12, 14, 26, and 28 have been considered but are moot in view of the new ground(s) of rejection.

Prior Art of Record

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yergenson teaches two-level gap developing device.

Contact Information

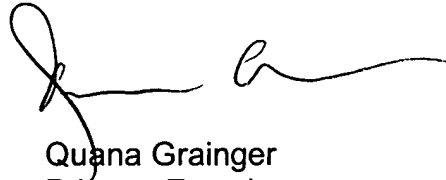
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quana Grainger whose telephone number is 703-308-7616. The examiner can normally be reached on weekdays between the hours of 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley can be reached on 703-308-1373. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7382 for regular communications and 703-305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-3431.

Application/Control Number: 09/535,158
Art Unit: 2852

Page 7

A handwritten signature in black ink, appearing to read 'Quana Grainger', with a long horizontal flourish extending to the right.

Quana Grainger
Primary Examiner
Art Unit 2852

QG
December 13, 2002